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March 7, 2007

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 U.S. Department of Energy  
 Richland Operations Office  
 P.O. Box 550, A5-11  
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EDMC

Re: U.S. Environmental Protection Agency Comments on the Remedial  
 Design/Remedial Action Work Plan for the 221-U Facility

Dear Mr. McCormick:

The U.S. Environmental Protection Agency (EPA) appreciates the opportunity to review and provide comment on the *Remedial Design/Remedial Action Work Plan for the 221-U Facility* (DOE/RL-2006-21). The document was clearly written and well edited. There are, however, several deficiencies in the document with regard to the content that needs to be in a work plan for a project as challenging and complicated as this. These deficiencies and other issues with the document are provided below.

The document provides a description of the major tasks that need to be performed, but there are some tasks where a decision should have been made on the approach even though many of the details need to be developed during the design phase. It would have been better if the U.S. Department of Energy (DOE) had made a decision on how to deal with these challenges and included this definitively in the work plan. Specificity and decisiveness do not need to be abandoned because the work plan can be revised if conditions warrant updates or changes. The following paragraphs contain examples of places where decisions should have been made.

One particularly noteworthy example of missing an opportunity to refine the plan for the remedial action is the disposition of low-risk rubble. There should be no ambiguity about the use of this rubble as fill, for the 271-U basement excavation, or any other portions of the site under the barrier. This rubble can be used to offset resource use at borrow areas. Screening levels for radionuclides associated with the rubble should be defined to bound what is meant by "low-risk". Methods of using field instruments to screen rubble based on radionuclide levels and procedures for determining if dangerous waste constituents are present need to be described so that the rubble can be sorted properly. The disposal pathway for rubble that fails to meet the low-risk criteria should also be defined in this document.

Other examples of indecision include the "disposition" of the wing wall of the railroad tunnel and a lack of rules to direct revegetation of disturbed areas (when to

revegetate considering the industrial land use). These planning decisions need to be made and then proposed in the draft document. The rules and criteria used to guide and control activities have to be present for the work plan to be used effectively.

Another reason this document is deficient is its lack of performance standards developed to benchmark the performance of the remedy. Section 11.6 of the Tri-Party Agreement Action Plan contains requirements for work plans such as RD/RA work plans. This section includes the following statement, "At the time work plans are submitted for approval they shall describe in detail the work to be done and include the performance standards to be met." The only performance standard presented in the work plan submitted by DOE for review is for barrier performance (meeting an infiltration rate of 3.2 mm/yr long-term average). This performance standard was actually specified in the ROD to shore up monitoring requirements for the non-traditional barrier design (evapotranspiration barrier) and because the remedy will not have a traditional liner-leachate collection system. Unfortunately, the document is also lacking the description of the types of performance monitoring that will need to be conducted to demonstrate that the performance standard is being met.

One thing that should have a standard is the performance of grout in supporting the structure or immobilizing waste. Modeling of contaminant transport within the monolith of the constructed remedy should have been utilized to develop specific criteria to use for grout formulation. Other performance standards might include measures of the effectiveness of institutional controls, and bounding accumulation levels in high-volume air samplers. The maximum amount of radionuclides on air sampler media should be specified since the monitoring locations have already been identified and potential-to-emit calculations have been performed for the main phases of the remedial action. These examples are by no means exhaustive.

The document is not much more than a compilation of information from the feasibility study and ROD. In fact, the feasibility study appendices have much more detail and seem to indicate that more thought was put into these early planning efforts than those used to develop this document. Studies which are being used to support the remedial design need to be described in more than a cursory fashion, especially since they may provide much needed detail. According to EPA guidance (EPA 540-G-90-001), a work plan for remedial design must include design criteria and assumptions. The document contains few examples of design criteria and the majority of those examples are qualitative.

One of the prime issues that has affected the review cycles of work plans and other plans has been the pulling back of detail that is necessary to describe activities. This document is like many submitted in recent years that have a paucity of details describing important functions or tasks. There either needs to be enough detail provided in the work plan to understand what is being done in the field or laboratory, or the specifics need to be in a regulatory citation or referenced (named or numbered) procedure that is available to DOE and the regulatory agencies.

The scope and complexity of the remedial design and remedial action for the 221-U Facility are more like those of the K-Basins project than they are like the dig-and-haul actions in the river corridor. Considering this, the K-Basins work plan (DOE/RL-99-89, Revision 1) draws a much better connection between the ARARs and the activities and procedures that will be used to fulfill them. DOE needs to provide a similar link between the ARARs and the planned work for the 221-U Facility.

The document does not fulfill the requirement in the ROD to include a more detailed map showing the site and land use control boundaries. EPA appreciates the map showing the entire U Plant area (including 200-UW-1 waste sites and ancillary facilities) and the one showing placement of support areas during the construction of the remedy. However, there is no map in the document with comparable or greater detail than Figure 7 from the ROD. That figure illustrates the pre- and post-remediation land use control boundaries.

The document should be revised to require that a new Sampling and Analysis Plan be developed to cover post-ROD sampling activities focused on waste designation and management. The waste management section needs to indicate that it is the waste management plan. Also, the schedule should call out when the Remedial Design Report (including a 90% design) will be submitted to the regulatory agencies per Section 7.3.9 of the Tri-Party Agreement Action Plan. The Operations and Maintenance Plan submittal also should be included in the schedule.

The role of the regulatory agencies needs to be correctly portrayed in the document. The project managers for all three parties should be identified as decision makers in Section 3.1. The document should also be modified to indicate that the regulatory agencies can take an extension in the review of design packages without needing permission from DOE, which is consistent with the Tri-Party Agreement. The last sentence of Section 3.2.1 needs to be replaced with the sentence that is in DOE/RL-99-89 (Revision 1) and accurately reflects EPA's role. That sentence should read, "The EPA will make a determination of the significance of the change and appropriate documentation will follow based on the type of change." However, there is some question about the utility of describing in the RD/RA work plan the process by which a decision document is modified. The RD/RA work plan should focus more on how changes are made to the plan itself.

The closeout guidance contained in Appendix A is not consistent with EPA guidance from the Superfund Program Implementation Manual. A final closeout report is restricted to closing an entire NPL site, not a portion of one. EPA believes that a construction completion report would be more appropriate for the intended purpose. Also, eventually the information needs to be rolled up in a Remedial Action Report. There may be several ways that this can be accomplished including the possibility of combining information from more than one canyon or remedial action. EPA is willing to meet with DOE and the Washington Department of Ecology (Ecology) to discuss closeout of remedial actions. There are pertinent sections of the Tri-Party Agreement Action Plan (e.g., Section 7.3.10) and guidance such as that contained in

EPA 540-R-98-016 that we should discuss. Whatever the report ends up being called, it needs to be added to the administrative record file.

EPA does not understand why there is an appendix discussing the baseline risk assessment (Appendix B). If there is a good reason for inclusion, please explain. Also, if the appendix material is retained, it should describe the approach used to estimate ecological risk as this is an important part of the baseline risk assessment. Text in the feasibility study and ROD should help in writing this part. The text of Appendix C should indicate that the public involvement plan is consistent with the public involvement plan for the Hanford Site. Also, DOE should make sure they plan to do all of the things in this specific plan.

To conclude, the design and remediation process for this project will require a multi-year, multi-phase effort. The document has a commitment to revise the work plan when the design of the barrier has progressed. It must contain a commitment to provide updates at logical points in the remedial design and remedial action planning process and those points need to be identified to the extent possible at this time. Furthermore, the comments contained in this letter must be addressed to assure that the remedial design/remedial action work plan is sufficient to govern and help plan activities necessary for design and implementation of the remedy.

There are a few additional, minor comments that EPA would be like to provide at the project level. EPA requests a meeting to pass along these additional comments and to provide an opportunity to clarify comments contained in this letter. Please contact me at (509) 376-8665 if you have questions.

Sincerely,



Craig Cameron  
Project Manager

cc: Larry Romine, DOE  
Wade Woolery, DOE  
Rick Bond, Ecology  
Administrative Record: 221-U Facility (U Plant CDI)  
*OU: U Plant AA*